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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/895,881	06/29/2001	Brad E. Paden	2673.2.1	5381

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EXAMINER	
SMITH, TYRONE W	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/895,881	PADEN ET AL.	
	Examiner	Art Unit	
	Tyrone W Smith	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 7-67* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-4,7-32 and 50-67* is/are allowed.

6)☒ Claim(s) *33-35 and 43-45* is/are rejected.

7)☒ Claim(s) *36-42 and 46-49* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 33-35 and 43-45 rejected under 35 U.S.C. 103(a) as being unpatentable over Barada et al (6404088) and Ueyama (6215218).

Regarding Claims 33-35. Barada discloses a Magnetic Bearing Device, which includes a pair of positional displacement (Figure 2 item(s) 5-8) sensors to produce a displacement output (column 6 lines 15-16), an offset correcting means (Figure 3 item 19) and sensor gain adjuster (Figure 3 item 20) for producing an offset corrected signal from the positional displacement sensors and for adjusting the displacement output to account for a sensor offset (column 6 lines 33-35), position compensating means (Figure 2 item 13) for compensating for the offset corrected signal from the offset correcting means (column 6 lines 36-38), a control means (Figure 2 item 15) for converting the adjusted displacement output to a force for positioning the movable body and an actuator/driver (Figure 1 item 14) for positioning the movable body with force to a point of substantial equilibrium (column 6 lines 40-56). Refer to abstract; column 2 lines 23-67, column 3 lines 1-40, column 4 lines 1-67 and column 5 lines 1-65; Figure(s) 3-5. However, Barada does not specifically disclose an axial displacement output as required by the current invention.

Ueyama discloses a control magnetic bearing system (Figure(s) 3, 4 and 6). The system includes a displacement detection section (Figure 3 item 9) with three (plurality) displacement sensors (two ***radial*** and one ***axial***) (Figure 9 item(s) 23-25, column 6 lines 41-45) and a controller (Figure 3 item 2; column 6 lines 31-55) with a DSP board (Figure 6 item 16; column 6 lines 31-55). Refer to Figure 6; a sensor circuit (Figure 6 item 13; column 8 lines 23-52) receives displacement output information from the displacement detection section.

It would have been obvious to one of ordinary skill in the art at the time in invention to combine Barada's invention of a Magnetic Bearing Device with Ueyama's control magnetic bearing system. The systems would provide a magnetic bearing control system capable of changing a control parameter according to the type of mechanical unit being used.

Regarding Claims 43 and 44. Barada discloses actuator module is configured to convert the output from the position control module to create an electromagnetic force and/or mechanical force to position the movable body to the point of substantial axial equilibrium (Figure 2A; column 2 lines 24-61).

It would have been obvious to one of ordinary skill in the art at the time in invention to combine Barada's invention of a Magnetic Bearing Device with Ueyama's control magnetic bearing system. The systems would provide a magnetic bearing control system capable of changing a control parameter according to the type of mechanical unit being used.

Regarding Claim 45. Ueyama discloses memory (Figure 3 item 2) for storing data (Figure 3; column 7 lines 33-48).

It would have been obvious to one of ordinary skill in the art at the time in invention to combine Barada's invention of a Magnetic Bearing Device with Ueyama's

control magnetic bearing system. The systems would provide a magnetic bearing control system capable of changing a control parameter according to the type of mechanical unit being used.

Allowable Subject Matter

3. Claims 36-42 and 46-49 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art(s) of record does not disclose storing a plurality of axial displacements output over a period of time, recalling the displacements from memory for estimating a sensor offset using the stored displacement outputs.

4. Claims 1-32 and 50-67 in condition for allowance.

The following is an examiner's statement of reasons for allowance: The prior art(s) of record does not disclose storing a plurality of axial displacements output over a period of time, recalling the displacements from memory for estimating a sensor offset using the stored displacement outputs.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Amendments / Arguments

5. Applicant's arguments filed May 28, 2004 have been fully considered but they are not persuasive.

Examiner agrees with the Applicant regarding claims1-32 and 50-67, where the invention stores and recalls axial displacement information for control of the magnetic bearing system with the combination of steps necessary to present the current invention. This is not found in the prior arts of record.

However, Barada and Ueyama still read on claims 33 through 35 as present by the Applicant. The invention presents a displacement sensor, a sensor offset compensation module, position control module and actuator module, and this is presented in Barada in combination with Ueyama's single axial displacement sensor. Examiner request that the Applicant refer to the rejection above.

Examiner suggest 1) refer to the objected claims, 2) amending the claims to expedite prosecution and 3) contact Examiner if there are any questions or issues with the present action.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Art related to Magnetic Bearing Systems or similar is disclosed in the PTO-892.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tyrone W Smith whose telephone number is 571-272-2075. The examiner can normally be reached on weekdays from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin, can be reached on 571-272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tyrone Smith
Patent Examiner

Art Unit 2837

18/04

MICHAEL SHERRY
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